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ThOF am 08:50 **Application of Automated Serial Blood Sampling in Mice and Dried Blood Spot Technique Using LC-MS/MS for Pharmacokinetic Studies**; Roger Pham; *Amgen, Inc., Thousand Oaks, CA*

ThOF am 09:10 **A uHPLC-MS/MS Assay for the Analysis of Omeprazole in Rat Blood Using Dried Blood Spots**; Heidi Snapp; Guowen Liu; Qin Ji; Mark E. Arnold; *Bristol-Myers Squibb Co., Princeton, NJ*

ThOF am 09:30 **Liquid Extraction Surface Analysis (LESA) of Dried Blood Spot Cards via Chip-Based Nanoelectrospray for Drug and Drug Metabolite Monitoring Studies;** Christopher Alpha[1]; Daniel Eikel[1]; Jason Vega[1]; Jack D. Henion[2]; Simon J. Prosser[1]; *[1]Advion BioSystems, Inc., Ithaca, NY; [2]Advion BioSciences, Inc, Ithaca, NY*

ThOF am 09:50 **Direct Quantitative Bioanalysis of Drugs in Dried Blood Spot Samples**; Paul Abu-Rabie[1]; Neil Spooner[1]; Matthias Loppacher[2]; *[1]GlaxoSmithKline R&D Ltd, Ware, UK; [2]Camag, Muttenz, Switzerland*

ThOF am 10:10 **Quantitative Analysis of Dried Blood Spots by DART (Direct Analysis in Real Time) /MS/MS without Sample Preparation**; Justin Gordon[1]; Elizabeth Crawford[2]; Jing-Tao Wu[1]; Brian D. Musselman [2]; Ming-xiang Liao[1]; Bei-Ching Chuang[1]; Cindy Xia[1]; David Ho[3]; Lily Li[3]; ShaoxiaYu[1]; *[1]Millennium Pharmaceuticals, Inc., Cambridge, MA; [2]IonSense, Inc., Saugus, MA; [3]TandemLabs, Woburn, MA*

8:30 – 10:30 AM, THURSDAY MORNING
MS AND CELLULAR PATHWAYS
Ileana Cristea, presiding
Room: Hall 4

ThOG am 08:30 **Pathway Analysis and Characterization of Novel Downstream Effectors of the mTORC1/S6K Signaling Axis by Quantitative Phosphoproteomics**; Yonghao Yu; Sang-Oh Yoon; Qian Yang; Xiaoju Max Ma; Judit Villen; John Blenis; Steven P. Gygi; *Harvard Medical School/Department of Cell Biology, Boston, MA*

ThOG am 08:50 **Pathway Analysis Reveals Apoptosis as a Regulator of Breast Cancer Induced Myeloid-Derived Suppressor Cells**; Olesya Chornoguz[1]; Lydia Grmai[1]; Pratima Sinha[1]; Konstantin Artemenko[3]; Roman Zubarev[2]; Suzanne Ostrand-Rosenberg[1]; *[1]University of Maryland Baltimore County, Baltimore, MD; [2]Karolinska Institutet, Stockholm, Sweden; [3]Uppsala University, Uppsala, Sweden*

ThOG am 09:10 **Functional and Mass Spectrometric Analysis of Histone Deacetylase 5 (HDAC5) Phosphorylation and Protein-Protein Interactions**; Fang Yu; Todd M. Greco; Amanda J. Guise; Ileana M. Cristea; *Princeton University, Princeton, NJ*

ThOG am 09:30 **A Targeted Protein-Protein "Interact-ome" of Components in the Insulin Signaling Pathway in Drosophila and Compared to Human Cancer Cells**; John M Asara[1, 2]; Meghana Kulkarni[2]; Xuemei Yang[1]; Adam Friedman[2]; Norbert Perrimon[2]; Jeffrey Engelman[3]; *[1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Harvard Medical School, Boston, MA; [3]Massachusetts General Hospital, Charlestown, MA*

ThOG am 09:50 **Time-Resolved Proteomic and Genomic Studies Reveal that Replication Fork Progression is Remarkably Uniform Throughout the Yeast Genome**; Matthew Sekedat[1]; David Fenyo[1]; Richard Rogers[2]; Alan Tackett[3]; John Aitchison[2]; Brian Chait[1]; *[1]The Rockefeller University, New York, NY; [2]Institute for Systems Biolog, Seattle, WA; [3]UAMS Biochemistry & Molecular Biology, Little Rock, AR*

ThOG am 10:10 **Quantitative Phosphoproteomics Identifies Transient Signaling in the FAK-ERK Axis as a Novel Molecular Determinant of Embryonic Stem Cell Differentiation**; Yu Lu[1, 2]; Dita Mayerova[3]; Scott B. Ficarro[1]; Yi Zhang[1]; Manor Askenazi[1]; Jignesh R. Parikh[1]; C. John Luckey[3]; Jarrod A. Marto[1, 2]; *[1]Dana-Farber Cancer Institute, Boston, MA; [2]Harvard Medical School, Boston, MA; [3]Brigham and Women's Hospital, Boston, MA*

10:30 AM – 2:30 PM, THURSDAY
POSTER SESSION
Exhibit Hall ABCDE

2:30 – 4:30 PM, THURSDAY AFTERNOON
FUNDAMENTALS: ION-SURFACE INTERACTIONS AND PREPARATIVE MS
Guido Verbeck, presiding
Room: Ballroom HJ

ThOA pm 2:30 **Soft Landing of Gas-Phase Ions: An Overview**; Frantisek Turecek; *University of Washington, Seattle, WA*

ThOA pm 2:50 **Preparation of Monolayer Catalytic Materials on Surfaces in Vacuum Using Ion Soft Landing Method**; Wen-Ping Peng [1]; Grant Johnson[2]; Peng Wang[2]; Omar Hadjar[2]; Julia Laskin[2]; R. Graham Cooks [3]; *[1]National Dong Hwa University, Shoufeng, Hualien, Taiwan; [2]Pacific Northwest National Laboratory, Richland, WA; [3]Purdue University, West Lafayette, IN*

ThOA pm 3:10 **Surface Ion Modification and Characterization of Muscovite by Laser Ablated Carbon and Transition Metal Clusters Using Soft Landing Ion Mobility**; Stephen Davila; William Hoffmann; David Birdwell; Guido F. Verbeck; *University of North Texas, Denton, TX*

ThOA pm 3:30 **Fundamental Studies of Molecular Depth Profiling and 3-D Imaging with ToF-SIMS and Cluster Ions**; Caiyan Lu; Nick Winograd; *Penn State University, University Park, PA*

ThOA pm 3:50 **Computer Simulation of Depth Profiling in Secondary Ion Mass Spectrometry (SIMS)**; Barbara J. Garrison; *Penn State University, University Park, PA*

ThOA pm 4:10 **Determinants of Surface-Induced Dissociation and Collision-Induced Dissociation Behavior in Noncovalent Protein Ensembles**; Eric D. Dodds; Anne E. Blackwell; Christopher M. Jones; Vicki H. Wysocki; *University of Arizona, Tucson, AZ*

2:30 – 4:30 PM, THURSDAY AFTERNOON
BIOMOLECULAR STRUCTURE
Mark Chance, presiding
Room: Ballroom ACE

ThOB pm 2:30 **Structural Analysis of Macro-Molecular Protein Complexes Using Chemical Cross-Linking and Mass Spectrometry**; Franz Herzog[1]; Alexander Leitner[1]; Thomas Walzthöni[1]; Friedrich Förster[2]; Roman Jakob[3]; Timm Maier[3]; Martin Beck[4]; Ruedi Aebersold[1]; *[1]Swiss Institute of Technology, IMSB, Zurich, Switzerland; [2]Max Planck Institut, Munich, Germany; [3]Swiss Institute of Technology, IMB, Zurich, Switzerland; [4]European Molecular Biology Laboratory, Heidelberg, Germany*

ThOB pm 2:50 **The Gating Mechanism of a Potassium Channel Probed by Structural Mass Spectrometry**; Sayan Gupta [1]; Rhijuta D'Mello[1]; Vassiliy N. Bavro[2]; Stephen J. Tucker[2]; Catherine Vénien-Bryan[2]; Mark R. Chance[1]; *[1]Case Western Reserve University, Upton, NY; [2]University of Oxford, Oxford, UK*

ThOB pm 3:10 **Exploring the Mechanisms of Protein Folding and Subunit Assembly by Pulsed Oxidative Labeling and ESI-MS**; Bradley B. Stocks; Lars Konermann; *Univ of Western Ontario, London, Canada*

ThOB pm 3:30 **Structural Similarities and Differences of Human Apolipoprotein E2, E3, and E4, Determined by Chemical Footprinting and Mass Spectrometry**; Brian C. Gau[1]; Richard Yu-Cheng Huang [1]; Kanchan Garai[2]; Carl Frieden[2]; Michael L. Gross[1]; *[1]Washington University, St. Louis, MO; [2]Washington University School of Medicine, St. Louis, MO*

ThOB pm 3:50 **Analysis of a 670 kDa Multiprotein Complex by Cross-Linking and Mass Spectrometry**; Zhuo Chen[1]; Lutz Fischer[1]; Anass Jawhari[2]; Claudia Buchen[2]; Salman Tahir[1]; Tomislav Kamenski[2]; Morten Rasmussen[1]; Laurent Larivière [2]; Jimi-Carlo Bukowski-Wills[1,3;] Michael Nilges[4]; Patrick Cramer[2]; Juri Rappsilber[1]; *[1]Wellcome Trust Centre for Cell Biology, Edinburgh, UK; [2]Ludwig-Maximilians-Universität, Munich, Germany; [3]Centre for Systems Biology, Edinburgh, UK; [4]Institut Pasteur, Paris, France*

ThOB pm 4:10 **A Stable Isotope Labeling Strategy for Protein-Ligand Binding Analysis in Multi-Component Protein Mixtures**; Patrick D. Dearmond; Graham M. West; Michael C. Fitzgerald; *Duke University, Durham, NC*

2:30 – 4:30 PM, THURSDAY AFTERNOON
PEPTIDE ION FRAGMENTATION
Michael Van Stipdonk, presiding
Room: Ballroom BDF

ThOC pm 2:30 **Threshold Collision Induced Dissociation Measurements of Protonated Peptides**; Peter B. Armentrout[2]; Abhigya Mookherjee[2]; Stephanie Curtice[1]; Drew Heide[1]; Michael J. Van Stipdonk[1]; *[1]Wichita State University, Wichita, KS; [2]University of Utah, Salt Lake City, UT*

ThOC pm 2:50 **Dependence of Head-to-Tail Cyclization on Primary Structure of Peptides in Collision-Induced Dissociation: The Case of QWFGLM b_6**; Xian Chen[1]; Jeffrey Steill[2]; Jos Oomens[2, 3]; Nicolas Polfer[1]; *[1]University of Florida, Gainesville, FL; [2]FOM Rijnhuizen, Nieuwegein, Netherlands; [3]University of Amsterdam, Amsterdam, Netherlands*

ThOC pm 3:10 **Exploration and Enhancement of Enzymatic and Chemical Peptide Modification Strategies for Optimizing Fragmentation by Electron Transfer Dissociation**; A. Michelle English; Jeremy Balsbaugh; Jeffrey Shabanowitz; Donald F. Hunt; *University of Virginia, Charlottesville, VA*

ThOC pm 3:30 **Fragmentation Chemistry of Phosphorylated and De-Phosphorylated, Protonated Peptides**; Benjamin J. Bythell[2]; Sam Molesworth[1]; Sarah Young[1]; Christopher L. Hendrickson[3]; Alan G. Marshall[3]; Michael J. Van Stipdonk [1]; Bela Paizs[2]; *[1]Wichita State University, Wichita, KS; [2]DKFZ, Heidelberg, Heidelberg, Germany; [3]National High Magnetic Field Laboratory, Tallahassee, FL*

ThOC pm 3:50 **Insights into Histidine-Containing Peptide b2+Ion Formation and Structure Using IRMPD Spectroscopy and Fragment Ion Hydrogen-Deuterium Exchange**; Ashley Gucinski[1]; Julia Chamot-Rooke[2]; Arpad Somogyi[1]; Brittany R. Perkins[1]; Sung Hwan Yoon[1]; Vicki H. Wysocki[1]; *[1]The University of Arizona, Tucson, AZ; [2]CNRS, Palaiseau, France*

ThOC pm 4:10 **Cyclization and Rearrangement Reactions of a_n Ions of Protonated Peptides**; Bela Paizs[1]; Benjamin Bythell[3]; Philippe Maitre[2]; *[1]DKFZ, Heidelberg, Heidelberg, Germany; [2]Laboratoire de Chimie Physiq, Orsay, France; [3]NHMFL/ FSU, Tallahasse, FL*

2:30 – 4:30 PM, THURSDAY AFTERNOON
NOVEL DEVELOPMENTS IN INSTRUMENTATION
Zheng Ouyang, presiding
Room 155

ThOD pm 2:30 **Elemental Analysis by Distance-of-Flight MS and Array Detection**; Christie G. Enke[1]; Steven Ray[2]; Alexander W. Graham[2]; Gary M. Hieftje[2]; David W. Koppenaal[3]; Charles J. Barinaga[3]; *[1]University of New Mexico, Albuquerque, NM; [2]Indiana University, Bloomington, IN; [3]Pacific Northwest Nat'l Laboratory, Richland, WA*

ThOD pm 2:50 **Discontinuous Atmospheric Pressure Interface for Mass Spectrometry Instrumentation: Theory, Development and Application**; Wei Xu; Matthew Kirleis; Nickolas Charipar; Yu Xia; William Chappell; Zheng Ouyang; *Purdue University, West Lafayette, IN*

ThOD pm 3:10 **Time-Resolved Liquid Jet Desorption Electrospray Ionization-Mass Spectrometry (DESI-MS)**; Zhixin Miao; Hao Chen; *Ohio University, Athens, OH*

ThOD pm 3:30 **Development of a Portable Mass Spectrometer for Operation at 1 Torr**; Glen Jackson; *Ohio University, Athens, OH*

ThOD pm 3:50 **Transmission Geometry Profiling / Imaging Mass Spectrometry with Sub-Cellular Resolution**; Andrey I Zavalin; Richard M. Caprioli; *Vanderbilt Univ Sch of Med, Nashville, TN*

ThOD pm 4:10 **Sub-Attomole Detection Limits Using Enhanced Ion-Funnel Technology on a Triple Quadrupole Mass Spectrometer**; George Stafford[1, 2]; Tim Schlabach[1]; Anabel Fandino[1]; *[1]Agilent Technologies, Santa Clara, CA*

2:30 – 4:30 PM, THURSDAY AFTERNOON
QUANTITATION OF ENDOGENOUS ANALYTES IN REGULATED BIOANALYSIS
Rick Steenwyk, presiding
Room: Hall 2

ThOE pm 2:30 **Challenges and Key Considerations for Mass Spectrometry-Based Quantitation of Biomarkers in the Clinical Setting**; Joe Lin; Eddie Takahashi; Rick Steenwyk; *Pfizer, Groton, CT*

ThOE pm 2:50 **Parallelism and Response Factor Considerations for LC/MS Biomarker Assay Validation Using Surrogate Matrix and Surrogate Analyte Approaches**; Barry R. Jones[2]; Gary Schultz [1]; Steve Lowes[3]; James A Eckstein[4]; Barry Lutzke[5]; Bradley L. Ackermann[5]; *[1]Advion BioServices, Inc., Ithaca, NY; [2]Advion Biosciences, Ithaca, NY; [3]Advion BioSciences, Inc., Ithaca, NY; [4]Eli Lilly, Greenfield, IN; [5]Eli Lilly & Company, Indianapolis, IN*

ThOE pm 3:10 **Ultra-Low Detection Limits of Quinolinic Acid and Kynurenine via Gas Chromatography-Tandem Mass Spectrometry**; Francesca Notarangelo[2]; David Graham[3]; Robert Schwarcz[2]; Anthony Macherone[1]; *[1]Agilent Technologies, Wilmington, DE; [2]Maryland Psychiatric Research Center, Baltimore, Maryland; [3]Johns Hopkins School of Medicine, Baltimore, Maryland*

ThOE pm 3:30 **Application of a Conjugate Matrix and UHPLC-MS/MS Detection for the Determination of Eicosapentaeonic and Docosahexenoic Acid in Human Plasma**; Chester L Bowen; Christopher A. Evans; Jonathan Kehler; *GlaxoSmithKline, King of Prussia, PA*

ThOE pm 3:50 **Chemometric Optimization of LC-MS/MS Method for Quantification of the Biomarker Leukotrine B4 for Support of Gene-to-Clinic Drug Discovery Approach**; Margrét Thorsteinsdóttir[1]; Baldur Bragi Sigurdsson[2]; Gisli Bragason[2]; Ólafur Magnússon[3]; *[1]University of Iceland, Reykjavik, Iceland; [2]ArcticMass, Reykjavik, Iceland; [3]deCODE genetics, Reykjavik, Iceland*

ThOE pm 4:10 **Application of 2-D Nanospray Techniques for Improved Sensitivity in the Analysis of Adrenal Steroids in Plasma**; Kenneth Lewis[1]; Thurman Allsup[1]; Gary Valaskovic[2]; *[1]OpAns, LLC, Durham, NC; [2]New Objective, Inc., Woburn, MA*

2:30 – 4:30 PM, THURSDAY AFTERNOON
LASER/SURFACE DESORPTION TECHNIQUES FOR ADME
Shuguang Ma, presiding
Room: Hall 3

ThOF pm 2:30 **Mass Spectrometry of Organic Molecules and Laser-Induced Acoustic Desorption: Applications, Mechanisms and Perspectives;** Alexander Zinovev; Igor Veryovkin; Michael Pellin; *Argonne National Laboratory, Argonne, IL*

ThOF pm 2:50 **Liquid Extraction Surface Analysis (LESA) Combined with nESI-MS as a Novel Tool in Early ADME Studies of Drug Candidates;** Daniel Eikel; Christopher Alpha; Geoffrey S. Rule; Simon J. Prosser; Jack D. Henion; *Advion BioSystems, Inc., Ithaca, NY*

ThOF pm 3:10 **LDTD384-MS/MS for *in vitro* Assays : Different Buffer Environment**; Patrice Tremblay[1]; Pierre Picard[1]; Serge Auger[1]; Grégory Blachon[2]; *[1]Phytronix Technologies, Quebec, Canada; [2]Université Laval, Québec, QC*

ThOF pm 3:30 **High-Sensitivity MALDI-MRM-MS Imaging Applied to Determine the Penetration of Multiple Fluoroquinolone Drugs into Tuberculosis Lung Granulomas**; Brendan Prideaux[1]; Dieter Staab[1]; Anne Goh[2]; Veronique Dartois[2]; Peiting Zheng[2]; Hui Qing Ang[2]; Maxime Herve[2]; Clifton E Barry[3]; Laura Via[3]; Danielle Weiner[3]; Daniel Schimel[3]; Emmanuel K Dayao[3]; Markus Stoeckli[1]; *[1]Novartis Institutes for BioMedical Research, Basel, Switzerland; [2]Novartis Institute for Tropical Diseases, Singapore, Singapore; [3]National Institutes of Health, Bethesda, MD*

ThOF pm 3:50 **MALDI Imaging of Distribution of Xanthohumol and Its Metabolites in Rat Tissues**; Henry Y. Shion [3]; Dejan Nikolic[1]; Birgit Dietz[2]; Guido Pauli[2]; Brian Wright[1]; Ghenet Hagos[2]; Daniel Lantvit[2]; Alan L Millar[3]; John P. Shockcor[3]; Richard B. van Breemen[1] *[1]University of Illinois College of Pharmacy, Chicago, IL; [2]University of Illinois, UIC/NIH Botanical Center, Chicago, IL; [3]Waters Corp., Milford, MA*

ThOF pm 4:10 **Chemoselective Screening for Homocysteine and Related Endogenous Sulfhydryl Biomarkers in Blood and Urine Using Surface-Enhanced Transmission Mode Desorption Electrospray Ionization**; Joe Chipuk; Jennifer Brodbelt; *The University of Texas, Austin, TX*

2:30 – 4:30 PM, THURSDAY AFTERNOON
MS OF MEMBRANE PROTEINS
Christine Wu, presiding
Room: Hall 4

ThOG pm 2:30 **Quantitatively Probing Cellular Membrane Proteome Dynamics Using Membrane-Impermeable Chemical Probes and Proteomics Analysis**; Haizhen Zhang; Wei-Jun Qian; Tao Liu; Roslyn N. Brown; Matthew E. Monroe; Samuel O. Purvine; Ronald J. Moore; Liang Shi; Margaret F. Romine; James K. Fredrickson; William B. Chrisler; Steven H. Wiley; Ljiljana Paša-Tolić; Richard D. Smith; Mary S. Lipton; *PNNL, Richland, WA*

ThOG pm 2:50 **Glycan Determination on Human Embryonic Stem Cell Membrane Proteins**; Hyun Joo An[1]; Phung Gip[2]; Jaehan Kim[1]; Shuai Wu[1]; David Schaffer[2]; Carolyn Bertozzi[2]; Carlito Lebrilla[1]; *[1]University of California, Davis, Davis, CA; [2]University of California, Berkeley, Berkeley, CA*

ThOG pm 3:10 **A Multiplexed SRM Method to Monitor Membrane Protein Knockdown Using Viral Delivery of shRNA in Neuro 2A Cells**; Santiago E. Farias[2]; Amy Lasek[1]; Paula L. Hoffman[2]; Christine C. Wu[2]; *[1]Ernest Gallo Clinic and Research Center, UCSF, San Francisco, CA; [2]University of Colorado School of Medicine, Aurora, CO*

ThOG pm 3:30 **Using MALDI-TOF-MS to Probe Protein-Ligand Interactions of G-Protein Coupled Receptors Incorporated into Stable Polymerized Planar Supported Lipid Bilayers**; Erin Johnson; James R. Joubert; S. Scott

Saavedra; Vicki H. Wysocki; *University of Arizona, Tucson, AZ*

ThOG pm 3:50 **Phospholipid Bilayer Nanodiscs as a Platform for Integral Membrane Protein Analysis by Hydrogen Exchange Mass Spectrometry**; Chris Morgan [1]; Christine Hebling [2]; Kasper Rand[1]; James Jorgenson[2]; Darrel Stafford[2]; John R. Engen[1]; *[1]Northeastern University, Boston, MA; [2]University of North Carolina, Chapel Hill, NC*

ThOG pm 4:10 **V-Type ATPases: What Can We Learn from Mass Spectrometry?** Min Zhou[1]; Nelson Barrera[2]; Nina Morgner[1]; Carol Robinson[1]; *[1]University of Oxford, Oxford, UK; [2]University of Santiago de Chile, Santiago, Chile*

4:45 –5:30 PM, THURSDAY
PLENARY LECTURE
Hall 4

Svante Pääbo
Max Planck Institute for Evolutionary Anthropology

5:30 PM, THURSDAY
CLOSING TOAST
Hall 4